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<b>(21) International Application Number:</b> PCT/US96/07221 <b>(22) International Filing Date:</b> 17 May 1996 (17.05.96)  <b>(30) Priority Data:</b> 08/449,208      24 May 1995 (24.05.95)      US  <b>(71) Applicant:</b> WALKER ASSET MANAGEMENT LIMITED PARTNERSHIP [US/US]; Four High Ridge Park, Stamford, CT 06905 (US).  <b>(72) Inventors:</b> WALKER, Jay; 124 Spectacle Lane, Ridgefield, CT 06877 (US). SCHNEIER, Bruce; 730 Fair Oaks Avenue, Oak Park, IL 60302 (US).  <b>(74) Agents:</b> ROTHSTEIN, Jesse et al.; Amster, Rothstein & Ebenstein, 90 Park Avenue, New York, NY 10016 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>
<b>(54) Title:</b> 900 NUMBER BILLING AND COLLECTION SYSTEM AND METHOD FOR ON-LINE COMPUTER SERVICES		
<b>(57) Abstract</b> <p>A billing and collection system for enabling payment for a service provided over a data network (18) by a customer for a telephone connection (30) to a shared revenue billing network (19) where the telephone connection (30) to the billing network (19) regulates access to the service provided over the data network (18), comprising: a data network (18) including at least one user on-line service provider (27) presenting at least one on-line service for on-line access by a user with a user computer (22) through the data network (18), a billing network (19) and an access management computer (12) communicating with the data network (18) for enabling and terminating access to the on-line service provider (27) through the user computer (22) whereby the billing network (19) shares revenues for the telephone connection (30) with the on-line service provider (27).</p> <div data-bbox="1019 1163 1386 1940"><pre>graph TD; A[USER LOGS-ON TO INTERNET 18 ON USER COMPUTER 22] --&gt; B[USER SELECTS OSP 27 OF INTEREST]; B --&gt; C[HOME PAGE 29 OF OSP 27 DISPLAYS INSTRUCTIONS AND 800# 35 FOR USER TO CALL]; C --&gt; D[USER CALLS 800# ON TELEPHONE 28 OVER BILLING NETWORK 19]; D --&gt; E[900 CALL IS REQUIRED TO ACCESS MANAGEMENT COMPUTER 12]; E --&gt; F[ ];</pre></div>		

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900 NUMBER BILLING AND COLLECTION  
SYSTEM AND METHOD FOR ON-LINE COMPUTER SERVICES

BACKGROUND

The present invention relates generally to  
5 billing for on-line services made available to a user on  
a computer or data network, and more particularly, to a  
billing and collection system and method in which access  
to such services on the computer or data network and  
10 billing therefor is linked to a telephone connection  
associated with a billing network that manages and bills  
for access to information over the data network.

One of the key problems with on-line services  
(the "Internet") as it relates to commerce is the  
difficulty of Internet information service providers  
15 ("on-line service providers") to charge users  
per-minute, incremental or flat fees for usage. One way  
these fees are charged for access to various on-line  
service providers is by simply billing the user's  
on-line service account when such an account exists.

20 Another way by which information providers can  
collect payment is by having the user establish an  
account with the on-line service providers on a billing  
or credit card charge basis. This approach can be  
cumbersome, time consuming and risky from a security  
25 standpoint. Moreover, for on-line service provider  
access where relatively low costs are incurred, the  
collateral costs associated with small incremental  
billing make this approach uneconomical. Unfortunately,  
transferring credit card numbers via the Internet  
30 carries the risk of theft from unscrupulous computer  
hackers and thieves, and digital money or encryption  
metering concepts are still a long way from practical  
implementation.

Although encryption systems will eventually  
35 facilitate the common use of credit card numbers for  
transmission through cyberspace for decryption at the  
on-line service provider, some users will never feel  
completely comfortable providing their credit card

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numbers in this manner, even if the communications are ostensibly made secure. Moreover, some users may not be able to obtain a credit card or have one available with a sufficient amount of credit. Furthermore, credit card  
5 companies may assess or require a minimum charge in order to process the billing.

In summary, there exists a problem that casual short-term or single usage visits to a on-line service provider on a computer network cannot be charged for  
10 access on a per-minute or fractional basis in an economical manner for both the on-line service provider and the user.

#### SUMMARY OF THE INVENTION

In view of the above-described disadvantages in  
15 present billing practices for services obtained over the Internet, it is an object of the invention to provide a billing and collection system in which information is communicated to a user through a data network or first channel of communication, and billing is implemented  
20 through a billing network or second channel of communication.

It is a further object of the present invention to provide a billing and collection system whereby a user on the Internet can gain access to an on-line  
25 service provider and incur costs associated with such access through the use of a telephone-line communicating through a billing network.

It is an additional object of the invention to provide de-coupled time definite billing for on-line  
30 services provided over a data network, where the billing is implemented through the use of a telephonenumber associated with a billing network.

It is yet another object of the invention to provide a billing and collection system by which access  
35 to on-line services over the Internet and billing therefor is implemented through a 900-type shared

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revenue based toll fee number over the billing network for which revenues based on the toll fee are shared by the telephone company or billing agent associated with the billing network and the service provider, bureau  
5 and/or any agent thereof.

It is still another object of the invention to provide a billing and collection system by which a telephone company collects payment for the 900 calls and pays the on-line service providers a percentage of all  
10 revenues.

It is a further object of the invention to provide a method for billing and collection for services on the Internet in accordance with the above objects.

In accordance with the above objects and  
15 additional objects that will become apparent hereinafter, the present invention provides for billing and collection in a computer system, where, in one embodiment, the system comprises a data network including at least one on-line service provider for  
20 on-line access by a user over a first telephone line with a user computer through the data network, a billing network including a second telephone line at the user's residence or business from which access is desired, and an access management computer.

25 The access management computer enables a user to obtain access to the on-line service provider by communicating a unique access message to the user and the on-line service provider. The access management computer may be associated with the billing network, an  
30 independent service bureau which handles shared billing between the billing network and the data network, or it may be directly associated with the on-line service provider. The access management computer includes or is associated with a database, in which are stored access  
35 messages for the various on-line service providers. Alternatively, the access management computer may

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generate a particular access message. The access message may be valid for a single on-line service provider or a plurality of on-line service providers, and for a single session or for a plurality of sessions.

5           In one embodiment of the invention, when a user reaches the "home page" of a on-line service provider, it displays a telephone number for the user to call to obtain the access message. The home page may also display a message that the cost for using this on-line  
10 service provider is xx¢ per minute or xx¢ per minute after the first x minutes or the like, or some fixed charge. In an alternative embodiment, the instructions for the user and related phone information reside in a directory, either stored in memory on the user computer  
15 or in some external medium.

          When the user desires access to a on-line service provider, he or she dials the 900# which routes the call through the billing network to the access management computer. The access management computer  
20 provides the access message to the user over the voice network and at the same time provides the on-line service provider with instructions to allow the user who enters that access message into the user computer to gain access to the on-line service provider for as long  
25 as the second telephone line is left open, or for some predetermined amount of time after the 900 call is terminated. When the user enters the access message into the user computer, the on-line service provider reads the access message and if the access message  
30 entered by the user matches the access message provided by the access management computer, the user is given access to the on-line service provider. When the user desires to leave the on-line service provider, the user simply terminates the connection on the second telephone  
35 line. This signals the access management computer to terminate access to the on-line service provider for the

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particular access message associated with this session. This arrangement separates the channels of communication between the voice network and the data network. The user is simply billed for access to the on-line service  
5 provider by the telephone company (or billing collection agent) associated with the billing network for the toll fee calls in the usual course of telephone charges for telephone calls made on the second telephone line. The revenues based on the toll fee are shared between the  
10 telephone company (or billing collection agent) and the service provider, and any service bureau or agent thereof. The billing and collection agent may be an on-line service such as America On-Line, Prodigy and the like. Thus, the on-line service becomes a billing and  
15 collection agent for the on-line service provider and the telephone company.

In yet another embodiment of the invention, the system utilizes the 900# billing network as a on-line service provider gateway. The system operates similarly  
20 to the embodiment described above, but does not require that the communications be separated between the data network and the voice network. The user computer can access the voice network and data network directly through a single telephone connection. In this  
25 connection, the user computer operates in the same manner to provide access to a particular on-line service provider by enabling the same with an access message. The billing network provides for billing the user for as long as the access computer keeps the on-line service  
30 provider open for that access message, or for some predetermined amount of time. The user may then be billed a single aggregate charge for the on-line service provider or on-line service providers accessed. In an alternative single communication channel embodiment, the  
35 access message may be authenticatable whereby it is generated by the user computer using known encryption

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protocols and is communicated to the on-line service provider through the data network whereupon it is read and authenticated (decrypted) by the on-line service provider for access. In this regard, the authenticatable  
5 access message may contain user specified limitations as to desired access time and maximum cost to be incurred for any session.

In another embodiment of the invention, credit is obtained from the billing network and charged to the  
10 user through the phone company as described above with respect to the other embodiments. This credit is downloaded to the user computer and communicated to the on-line service provider over the data network. The system operates in the following manner. First, the user  
15 computer dials the 900# and connects to the access management computer. This may be done either on a single telephone line which serves to connect to both the billing network and the data network, or through a second telephone line which independently communicates  
20 the user computer with the billing network for the sole purpose of obtaining credit. The user is prompted through appropriate software to enter the amount of credit requested for on-line service provider access. The user enters the amount into the user computer, and  
25 the access management computer generates an authenticatable value token message which is based upon the amount of credit requested, an identification message of the particular on-line service requested, and possibly the 900# or the user's own telephone number or  
30 some other personal identification code. The value token message is transmitted to the user computer and stored in memory. The user then connects to the on-line service provider which has its own computer which reads and authenticates the value token message. The  
35 authentication may take the form of encryption and decryption. The user is then provided access to the



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on-line service provider to the extent of available credit embodied in the value token message. The value token message may be obtained in fractional amounts if desired. In this regard, the value token message may  
5 represent a series of fractional amounts of credit (e.g., pennies, dimes or quarters) which are used by the on-line service provider to gain access for corresponding limited amounts of time. Thus, the on-line service provider would intermittently read and  
10 authenticate the value token message and allow the user continued access to the extent of any remaining credit. When all credit is exhausted, access for the user is terminated until the user goes back to the billing network and repeats the procedure. The user is billed  
15 and revenues are shared with the on-line service provider as described above with respect to the other embodiments.

Alternatively, the billing provider may be disposed on the Internet itself in the form of a  
20 dedicated billing site. The billing site serves as a gateway to all of the networked on-line service providers and regulates all billing for and access thereto. The billing site has an access management computer associated therewith which facilitates access  
25 to the on-line service providers and communicates with a billing system. The billing system bills access charges to the user's on-line service account. When a user desires to obtain access to an on-line service provider, he or she is prompted by the billing site to enter a  
30 message ID associated with the user's on-line billing account. The billing site then provides an anonymous access message to the particular on-line service provider to which access is requested. The on-line service provider may have its own computer which records  
35 the amount of time access is made available for any given session. Similarly, the access management

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computer at the billing site may do the same to serve as a redundant audit trail. The access management computer continuously monitors the connection. When the user desires to terminate access to the on-line service provider, the access management computer sends a termination message to the on-line service provider to terminate user access. The process may be repeated if the user desires access to another on-line service provider. The billing site accumulates bills for all on-line service provider sessions, and then bills the user through the billing system in a conventional manner. Since the charges for various on-line service providers may vary, the billing site can bill the user a single aggregate charge for all on-line service providers accessed during any given period of time, even if the individual charges differ among all of the on-line service providers.

In any of the above-described embodiments, the on-line service provider may download software in lieu of information to the user computer.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic of the billing and collection system in accordance with a first principal embodiment of the present invention;

FIG. 2 is a flow chart of the billing and collection process in the first principal embodiment; and

FIG. 3 is a schematic of the access message database;

FIG. 4 is a schematic of the billing and collection system in a second principal embodiment of the present invention;

FIG. 5 is a schematic of the billing and collection system in a third principal embodiment of the present invention;

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FIG. 6 is a flow chart of the billing and collection process in the third principal embodiment of the present invention;

FIG. 7 is a schematic of the billing and collection system in a fourth principal embodiment of the invention;  
and

FIG. 8 is a flow chart of the billing and collection process in the fourth principal embodiment of the invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the several views of the drawings, there are depicted several embodiments of a parallel billing and collection system in accordance with the present invention.

Referring now to FIG. 1, there is depicted a block diagram of a first principal embodiment of the system generally referred to by the reference numeral 10. System 10 includes an access management computer 12, which communicates via a suitable connection 14 with a telephone network 16. The telephone network 16 is connected to a data network 18 (the "Internet"), and includes or is connected to a billing network 19. In this regard, the telephone network 16 may be comprised of a plurality of individual networks, where the Internet 18 and billing network 19 communicate with the user through different telephone companies. The Internet is made up of a plurality of on-line service providers 27. The operation of on-line services is well known and need not be described here in detail. The telephone network 16 is accessed by a user computer 22 through typical hardware such as a modem 24 over a first telephone line 26. Only one user computer 22 is shown for the purpose of illustration, but the Internet 18 is accessible to a large numbers of individual users. Each

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user requires a telephone 28 which communicates with the telephone network 16 and the billing network 19 over a second telephone line 30 which is separate and apart from the first telephone line 26 and allows calls to be placed to the access management computer 12 to facilitate access to the on-line service providers 27 as described below. The combination of the user computer 22 and telephone 28 may be collectively referred to as the user site 21. Here again, only one telephone 28 is depicted for the sake of clarity. Of course, it is anticipated that the user computer 22 itself could dial the billing network 19 over the second telephone line 30, if the user computer 22 is set up to accommodate parallel lines of communication. Another embodiment where the user computer 22 communicates through a single line of communication is discussed below and illustrated in FIG. 4.

Referring again to FIG. 1. the system 10 utilizes a first channel of communication to communicate information through the Internet 18 and a second channel of communication, the billing network 19, to facilitate billing for the information service provided. The billing network 19 includes a 900#-type shared revenue toll fee or premium charge network 32 which automatically charges a prescribed toll fee or charge to the calling party each time a call is made through the toll fee network. Such toll fee numbers are typically used to provide specific information or services for a given caller, e.g., stock prices, weather, travel information, and the like. For the purposes of the present invention, the use of the term "900#", identified by the reference numeral 35, is not limited to the use of a "900" toll fee network, but may encompass any toll fee or premium charge network that automatically charges a prescribed toll fee which is shared between the on-line service provider 27 (and any

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service bureau or agent associated therewith) and the telephone company (and any billing agent) each time the toll fee network 32 is accessed. Since some users may wish to have access from a business where 900 calls are  
5 blocked, charges may be incurred in connection with, for example, an 800 line as long as the user knows what the charges are for. The prescribed toll fee may be assessed on a per-minute basis, on a combination of fee levels for different amounts of time (i.e., xx¢ per  
10 minute or xx¢ per minute after the first x minutes or the like), or a flat fee charge. A toll fee log 33 keeps track of the numbers 35 called. This information is input to a billing system 34, so that the company that manages the billing network can periodically bill the  
15 callers who use the 900#.

As shown in the block diagram of FIG. 2, the user first logs-on to the Internet 18 in the customary manner on the user computer 22 over the first telephone line 26. The user selects a on-line service provider 27  
20 containing an information service that he or she wishes to browse. In one embodiment of the invention, the home page 29 of the on-line service provider 27 displays instructions for the user to follow to access the on-line service provider 27. These require that the user  
25 call a 900# 35 for which they will be charged, e.g., xx¢ per minute, some flat fee or combination thereof. The user then calls the 900# 35 on telephone 28, which call is communicated over the second telephone line 30 and through the billing network of the telephone network  
30 16 to the access management computer 12.

The term "access management computer" is used in a general sense. The access management computer 12 may actually comprise a plurality of computers that are coupled together through an appropriate network, e.g., a  
35 local area network (LAN). The access management computer

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12 also communicates through the telephone network 16 with the Internet 18 (and thus the on-line service providers 27). When the user calls the 900# 35, the call is routed to the access management computer 12.

5 The user transmits an on-line service identification message 29 through the telephone 28 and the second telephone line 30, which causes the access management computer 12 to provide a unique access message 39 for the service being accessed. The access message 39 is

10 either generated by the access management computer 12 or retrieved from a database 40. The user is prompted on the home page 29 of the on-line service provider 27 to enter the access message 39 into the user computer 22. The access management computer 12 uses the access

15 message 39 to enable access to the on-line service provider, by transmitting the access message 39 to the Internet 18 to make the on-line service provider 27 available for browsing by the specific user who enters the same access message 39 into the user computer 22.

20 In one embodiment, the user receives information from the on-line service provider 27 for as long as desired, and the costs associated therewith are incurred through the toll fee log 33 and billed to the user via the billing system 34 in accordance with conventional

25 practice. The toll fee log 33 computes the fee as a function of the length of time of the 900 telephone call. The user terminates access to the on-line service provider by simply hanging up the telephone 28. The access management computer 12 knows which call has been

30 terminated by checking the corresponding access message 39 for the particular on-line service provider 27 being accessed. Thus, when the call is ended, the access management computer 12 generates a termination message 43 and communicates the same to the on-line service 18,

35 where it is processed to end access to the on-line service provider 27.

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In an alternative embodiment, the user need not keep the second telephone line 30 open. After the user places a 900 call as described above, the access management computer 12 similarly generates or retrieves an access message 41 for the on-line service provider 27 to enable the information requested to be downloaded over the Internet and through the first telephone line 26 to the user computer 22, or to allow limited access to the on-line service provider 27 for some predetermined amount of time. The usage charge for the information at the on-line service provider is incurred in connection with the 900 call on some established fee basis (fixed, variable or the like). Here again, the cost for obtaining the information from the on-line service becomes linked to the user's phone bill. In this regard, it is also anticipated that software, in addition to or in lieu of information, could be downloaded to the user computer 22 in the same fashion.

The main advantage provided by these embodiments of the present invention is the separation through parallel communication channels of the flow of money from the flow of information through the computer network, enabling small billing charges for access to the on-line service providers 27 to be collected by a billing network or service bureau which then shares a percentage of the collected revenues with the on-line service providers 27. Another advantage realized by billing for services on the Internet 18 in this fashion, is the elimination of the risk of an unauthorized party obtaining access to a user's credit card number or information regarding the form of payment. The user is simply billed for the 900 call(s) in his or her monthly telephone statement. The information transaction is made easier and less time consuming, and overall billing costs are reduced.

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In accordance with the foregoing description, the present invention contemplates a method for billing and collection in a system for enabling shared revenues between an on-line service provider 27 over a data network 18 and a separate billing network 19 by billing a customer for a separate telephone connection over a second telephone line 30 through the billing network 19 where the telephone connection on the second telephone line 30 regulates access to the on-line service provider 27 over the data network 18 on the first telephone line 26 comprising: a data network 18 including at least one user on-line service provider 27 presenting at least one service for on-line access by a user over a first telephone line 26 with a user computer 22 through the data network 18; a billing network 19 accessible through the second telephone line 30; and an access management computer 12 for controlling access to the on-line service provider 27 by at least one of generating, and retrieving from a database 40, an access message 39 in response to a telephone connection over the second telephone line 30, comprising the steps of:

(a) connecting the user computer 22 to the data network 18 over the first telephone line 26 to reach an on-line service provider 27;

(b) calling a 900-type shared revenue telephone number 35 over the second telephone line 30 through the billing network 19 to establish a telephone connection to the access management computer 12;

(c) at least one of generating and retrieving from a database 40, an access message 39 with the access management computer 12 and communicating the access message 39 to at least one of the user and the on-line service provider 27;

(d) enabling access to the on-line service provider 27 for the user on the user computer 22 upon receipt of the access message 39 by said on-line service provider from the access management computer 12;



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(e) communicating information (or software) from the on-line service provider 27 to the user computer 22; and

(f) generating a billing charge for the  
5 telephone connection on the second telephone line 30, billing the user in connection with the toll fee for the 900 call and sharing revenues between the telephone company (or its billing agent) and the on-line service provider 27 (and any service bureau or agent associated  
10 therewith).

In one embodiment, the telephone connection on the second telephone line 30 is terminated when the user wishes to leave the on-line service provider 27 to cause the access management computer 12 to terminate access to  
15 the on-line service provider 27. Alternatively, the method involves terminating the 900 call immediately after obtaining the access message 39, which access message 39 enables access to the on-line service provider 27 for some predetermined amount of time,  
20 either for communicating certain information, or for downloading software to the user computer 22.

Referring now to FIG. 4, there is depicted a second principal embodiment 10' of the invention where the data network and billing network function  
25 essentially as a single entity. The billing network 19 thus serves as a on-line service provider gateway. In this regard, the user computer 22 communicates over a single telephone line 26 with the telephone network and obtains access to the Internet 18 by dialing the 900#  
30 35. When access to a specific on-line service provider is desired, the access management computer generates or retrieves an access message 39 as described above. This access message 39 is communicated to the on-line service provider 27 to enable access to the on-line service  
35 provider 27 for the user. The access management computer 12 also sends the access message 39 to the

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billing network 19 to enable a billing charge to be made in connection with opening the on-line service provider 27 for the user. Here again, the billing network 19 can generate a fixed charge for the particular session, or  
5 can generate a per-minute or incremental charge based upon the amount of time that the user spends browsing the on-line service provider. When the user desires to end a session, he or she leaves the on-line service provider 27 by following instructions associated with  
10 the on-line service provider 27, causing the on-line service provider 27 to either send a termination message 41 to the access management computer 12 and the billing network 19, or if the access management computer 12 continuously monitors access to that particular on-line  
15 service provider 27 for that particular access message 39, the access management computer 12 will signal the billing network 19 that billing for that session is to be completed. The user is billed for access to the on-line service provider as described with respect to  
20 the first principal embodiment. However, in this embodiment, the user may be billed for all time on the 900 line, plus the costs of access to any of the on-line service providers 27. Since different on-line service providers may charge different amounts for access, such  
25 charges could be itemized on the user's bill for calls made to the billing network. In an alternative single communication channel embodiment, the access message 39 may be authenticatable whereby it is generated by the user computer using known encryption protocols and is  
30 communicated to the on-line service provider 27 through the data network 18 whereupon it is read and authenticated (decrypted) by the on-line service provider 27 for access. In this regard, the authenticatable access message may contain user  
35 specified limitations as to desired access time and maximum cost to be incurred for any session.

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Referring now to FIGS. 5 and 6, there is depicted a third principal embodiment of the invention in which credit is obtained from the billing network and charged to the user through the phone company as described above with respect to the other embodiments. This credit is downloaded to the user computer 22 and communicated to the on-line service provider 27 over the data network 18. The system operates in the following manner. First, the user computer 22 dials the 900# and connects to the access management computer 12. This may be done either on a single telephone line 26 which serves to connect to both the billing network 19 and the data network 18, or through a second telephone line 30 which independently communicates the user computer 22 with the billing network for the sole purpose of obtaining credit. The user is prompted through appropriate software to enter the amount of credit requested for on-line service provider access. The user enters the amount into the user computer 22, and the access management computer 12 generates an authenticatable value token message 60 which is based upon the amount of credit requested, an identification message 62 of the particular on-line service requested, and possibly the 900# or the user's own telephone number or some other personal identification code. The value token message is transmitted to the user computer 22 and stored in memory. The user then connects to the on-line service provider 27 which has its own computer 52 which reads and authenticates the value token message 60. The authentication may take the form of encryption and decryption. The user is then provided access to the on-line service provider to the extent of available credit embodied in the value token message 60. The value token message 60 may be obtained in fractional amounts if desired. In this regard, the value token message 60 may represent a series of fractional amounts of credit

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(e.g., pennies, dimes or quarters) which are used by the on-line service provider to gain access for corresponding limited amounts of time. Thus, the on-line service provider 27 would intermittently read and authenticate the value token message 60 and allow the user continued access to the extent of any remaining credit. When all credit is exhausted, access for the user is terminated until the user goes back to the billing network 19 and repeats the procedure. The user is billed through the billing system 34 and revenues are shared with the on-line service provider 27 as described above with respect to the other embodiments.

Referring now to FIGS. 7 and 8, in a fourth principal embodiment of the invention, the user computer 22 communicates through the telephone network 16 with an access billing site ("billsite") 45 which regulates all billing for and access to the information service on-line service providers 27. The billing site 45 has an access management computer 12 associated therewith which facilitates access to the on-line service providers 27 and communicates with a billing system 34. The billing system 34 bills access charges to the user's on-line service account 50. When a user desires to obtain access to an on-line service provider 27, he or she is prompted by the billsite 45 to enter a message ID 49 associated with the user's on-line billing account 50. The billsite then provides an anonymous access message 52 to the particular on-line service provider 27 to which access is requested. The on-line service provider 27 may have its own computer 52 which records the amount of time access is made available for any given session. Similarly, the access management computer 12 at the billsite 45 may do the same to serve as a redundant audit trail. The access management computer associated with the billsite 45 continuously monitors the connection. When the user desires to terminate access to

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the on-line service provider 27, the access management computer 12 sends a termination message 56 to the on-line service provider 27 to terminate user access. The process may be repeated if the user desires access  
5 to another on-line service provider 27. The billsite 45 accumulates bills for all on-line service provider sessions, and then bills the user through the billing system 34 in a conventional manner. Since the charges for various on-line service providers 27 may vary, the  
10 billsite 45 can bill the user a single aggregate charge for all on-line service providers accessed during any given period of time, even if the individual charges differ among all of the on-line service providers.

The present invention has been shown and  
15 described in what are considered to be the most practical and preferred embodiments. It is anticipated, however, that departures can be made therefrom and that obvious modifications will occur to persons skilled in the art.

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CLAIMS

1. A billing and collection system for enabling shared revenues between a service provider over a data network and a billing network by billing a customer for a  
5 separate telephone connection over a second telephone line through the billing network where the telephone connection on the second telephone line regulates access to the service provided over the data network on the first telephone line, comprising:
- 10 a data network including at least one user on-line service provider for on-line access by a user over a first telephone line with a user computer through said data network;
- a billing network accessible through a second  
15 telephone line; and
- an access management computer for controlling access to said on-line service provider by at least one of generating, and retrieving from a database, an access message in response to a telephone connection over said  
20 second telephone line through said billing network, and using said access message to allow the user to access said on-line service provider,
- whereby a prescribed toll fee for said telephone connection over said second telephone line is  
25 billed to the user for calls made on said second telephone line over said billing network, and revenues collected from said toll fee are shared with said on-line service provider.
2. The billing and collection system recited in Claim 1,  
30 wherein said on-line service provider downloads software over said data network to said user computer.
3. The billing and collection system recited in Claim 1, wherein said user computer communicates with said billing network through said second telephone line to  
35 connect to said access management computer.

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4. A method for billing and collection in a system for enabling shared revenues between a service provider over a data network and a separate billing network by billing a customer for a separate telephone connection over a
- 5 second telephone line through the billing network where the telephone connection on the second telephone line regulates access to the service provided over the data network on the first telephone line comprising: a data network including at least one on-line service provider
- 10 for on-line access by a user over a first telephone line with a user computer through said data network; a billing network accessible through a second telephone line; and an access management computer for controlling access to said on-line service provider by at least one
- 15 of generating, and retrieving from a database, an access message in response to a telephone connection over said second telephone line, and using said access message to allow the user to access the on-line service provider until termination of said telephone connection over said
- 20 second telephone line, comprising the steps of:
- (a) connecting said user computer to said data network over said first telephone line to reach an on-line service provider;
  - (b) at least one of the user and said user

25 computer calling a 900-type shared revenue telephone number over said second telephone line through said billing network to establish a telephone connection to said access management computer;

  - (c) at least one of generating and retrieving

30 from a database, an access message with said access management computer and communicating said access message to at least one of the user, said user computer and said on-line service provider;

  - (d) enabling access to said on-line service

35 provider for the user on said user computer upon receipt of said access message by said on-line service provider from said access management computer;

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(e) communicating information from said on-line service provider to said user computer;

(f) terminating said telephone connection on said second telephone line to cause said access management computer to terminate access to said on-line service provider; and

(g) said billing network generating a billing charge associated with said telephone connection on said second telephone line, billing the user and sharing revenues with said on-line service provider.

5. A method for billing and collection in a system for enabling shared revenues between a service provider over a data network and a separate billing network by billing a customer for a separate telephone connection over a second telephone line through the billing network where the telephone connection on the second telephone line regulates access to the service provided over the data network on the first telephone line comprising: a data network including at least one on-line service provider for on-line access by a user over a first telephone line with a user computer through said data network; a billing network accessible through a second telephone line; and an access management computer for controlling access to said on-line service provider by at least one of generating and retrieving from a database, an access message in response to a telephone connection over said second telephone line, comprising the steps of:

(a) connecting said user computer to said data network over said first telephone line to reach an on-line service provider;

(b) at least one of the user and said user computer calling a 900-type shared revenue telephone number over said second telephone line through said billing network to establish a telephone connection to said access management computer;



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(c) at least one of generating and retrieving from a database, an access message with said access management computer to enable access to said on-line service provider for a predetermined amount of time and  
5 communicating said access message to at least one of the user, said user computer and said on-line service provider;

(d) communicating information from said on-line service provider to said user computer; and

10 (e) said billing network generating a billing charge associated with said telephone connection on said second telephone line, billing the user and sharing revenues with said on-line service provider.

6. The method recited in Claim 5, wherein step (d)  
15 comprises downloading software associated with said on-line service provider over said data network to said user computer.

7. A billing and collection system for enabling shared revenues between a service provider over a data network  
20 and a billing network by billing a customer for a telephone connection through the billing network where the telephone connection regulates access to the service provided over the data network, comprising:

a data network including at least one user  
25 on-line service provider for on-line access by a user with a user computer through said data network;

a billing network accessible from said user computer; and

an access management computer for controlling  
30 access to said on-line service provider over said data network by at least one of generating, and retrieving from a database, an access message in response to a telephone connection between said user computer and said access management computer over said billing network,  
35 said access management computer communicating said access message to said on-line service provider to allow

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the user to access the on-line service provider from said user computer,

whereby a prescribed toll fee for said telephone connection over said second telephone line is  
5 billed to the user for calls made on said second telephone line over said billing network, and revenues collected from said toll fee are shared with said on-line service provider.

8. The billing and collection system recited in Claim 7,  
10 wherein said user computer generates an authenticatable access message which is read and authenticated by said on-line service provider, where said authenticatable access message represents user-selected limitations including access time and costs.

15 9. A method for billing and collection in a system for enabling shared revenues between a service provider over a data network and a separate billing network where the telephone connection to the billing network facilitates access to the service provided over the data network:  
20 comprising a data network including at least one on-line service provider for on-line access by a user over said data network; a billing network; and an access management computer for controlling access to said on-line service provider and providing said billing  
25 network with an authenticatable value token message representing credit provided to the user for access to said on-line service, comprising the steps of:

(a) connecting said user computer to access management computer through said billing network;

30 (b) generating an authenticatable value token message with said access management computer, and communicating said authenticatable value token message to said user computer, said authenticatable value token message representing user credit for access to said  
35 on-line service provider;

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(c) communicating said authenticatable value token message from said user computer to said on-line service provider where said on-line service provider reads and authenticates said authenticatable value token message;

(d) enabling access to said on-line service provider for the user on said user computer and communicating information from said on-line service provider to said user computer; and

(e) said billing network generating a billing charge for said user credit and sharing revenues with said on-line service provider.

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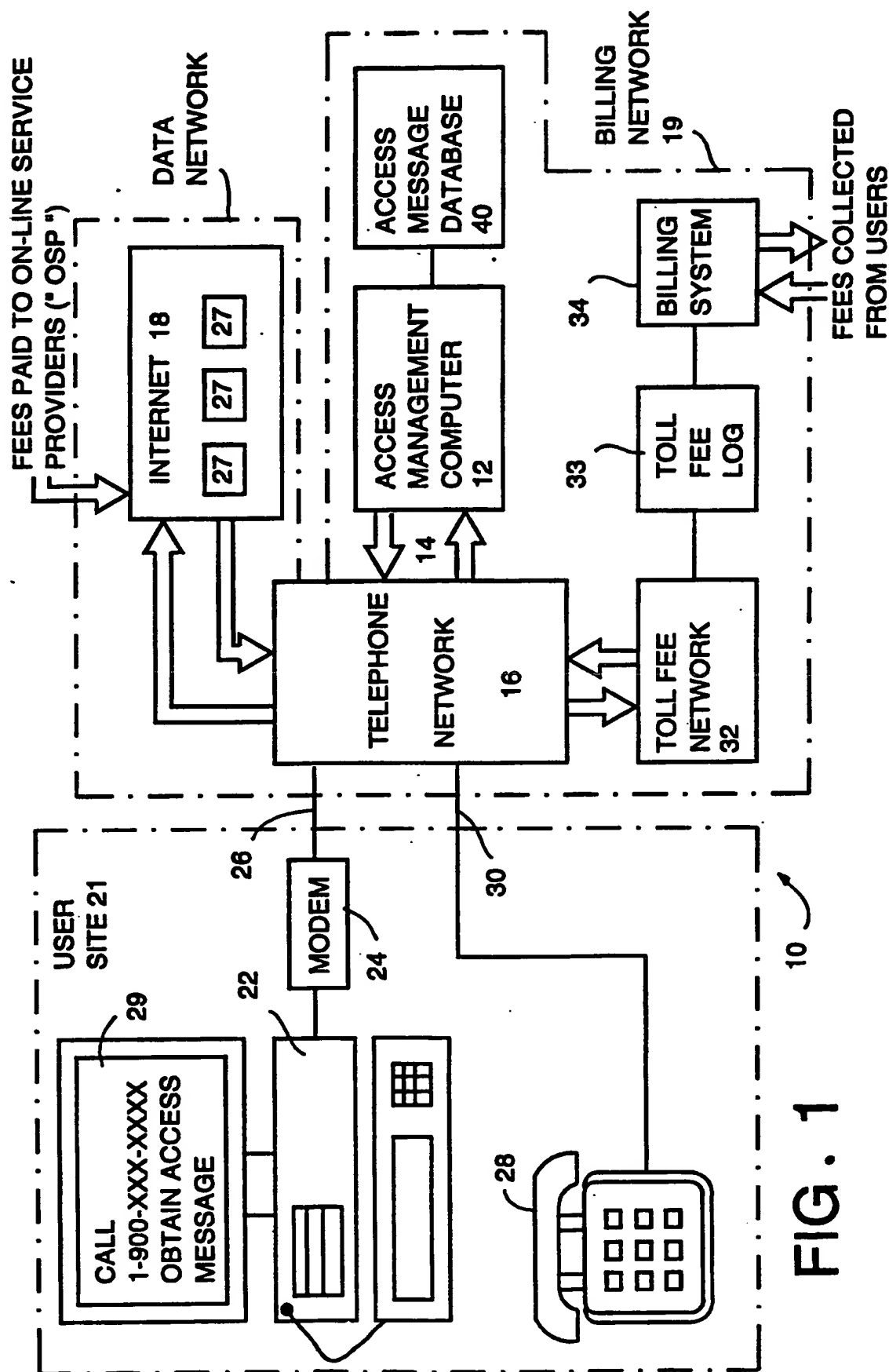
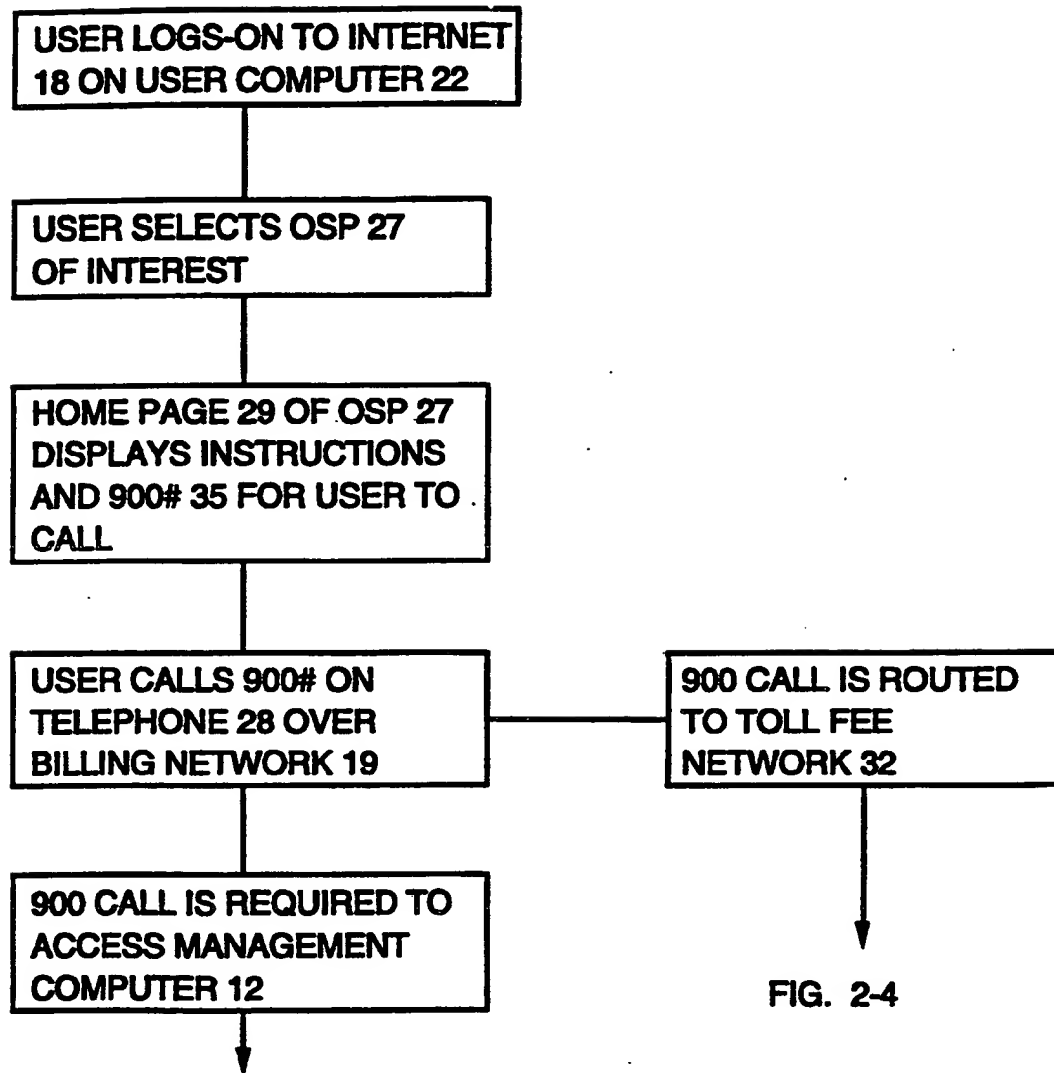
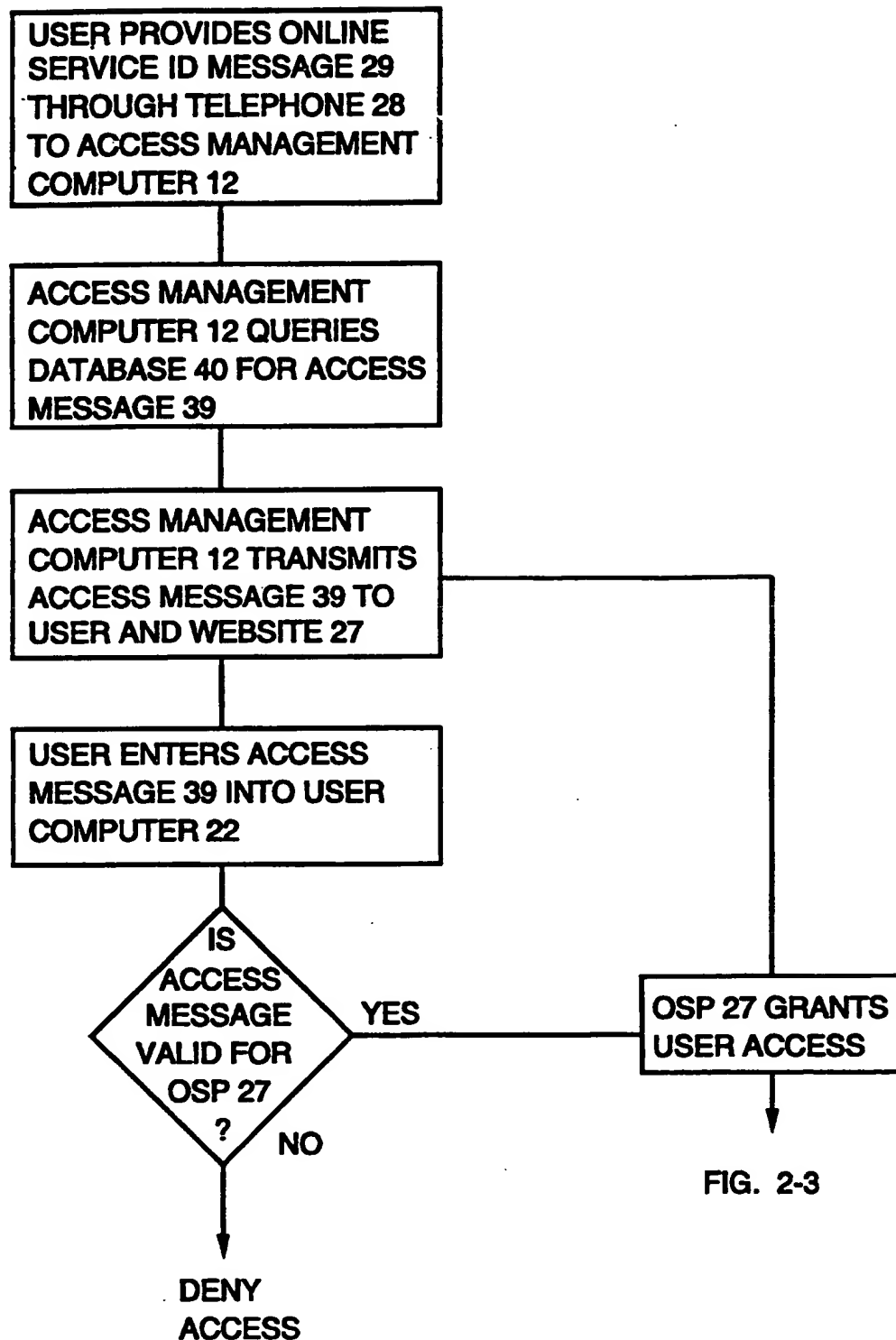


FIG. 1

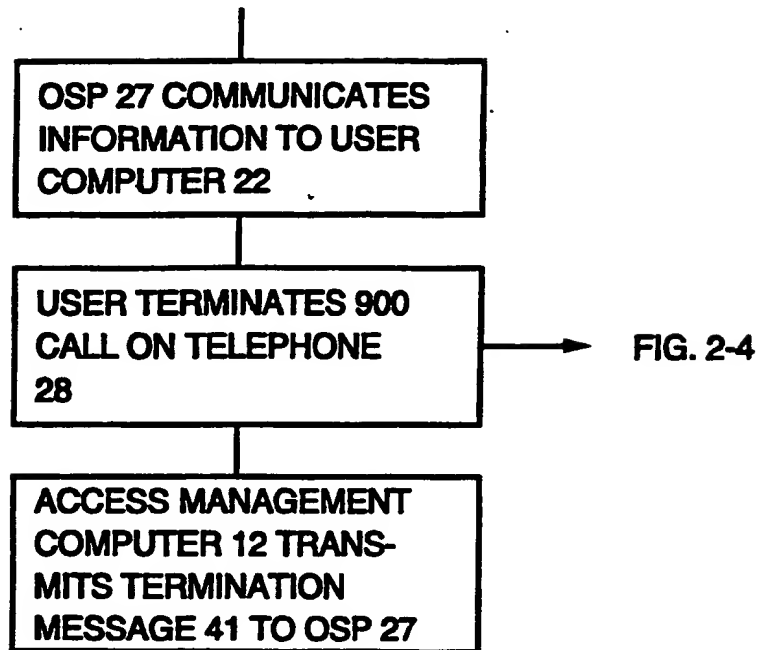
## FIG. 2-1



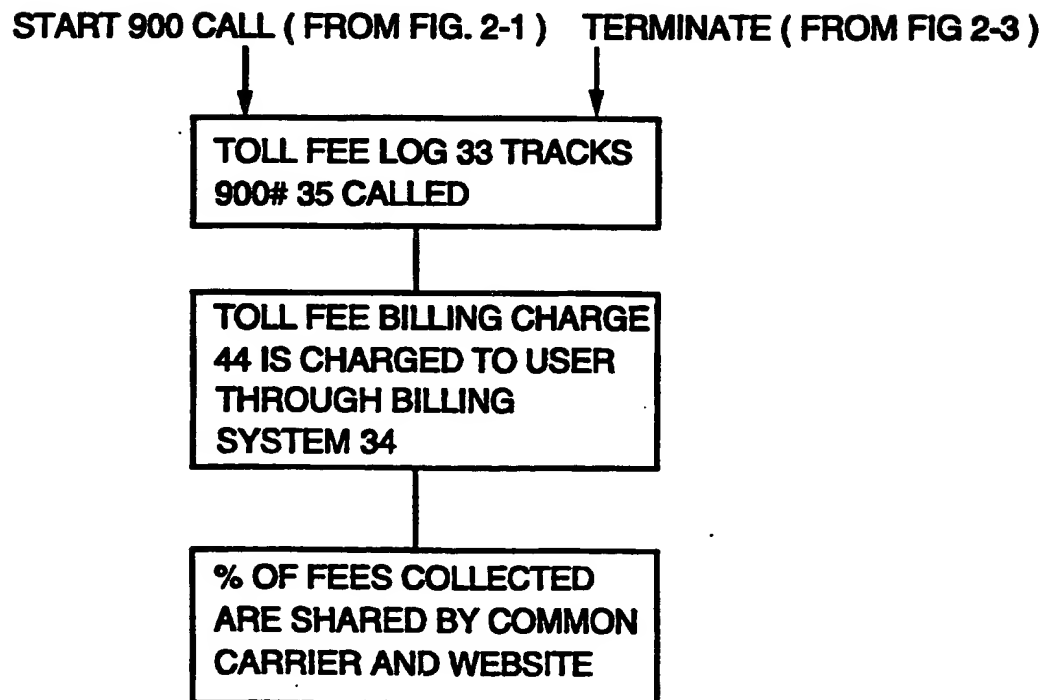
CONT'D 2-2

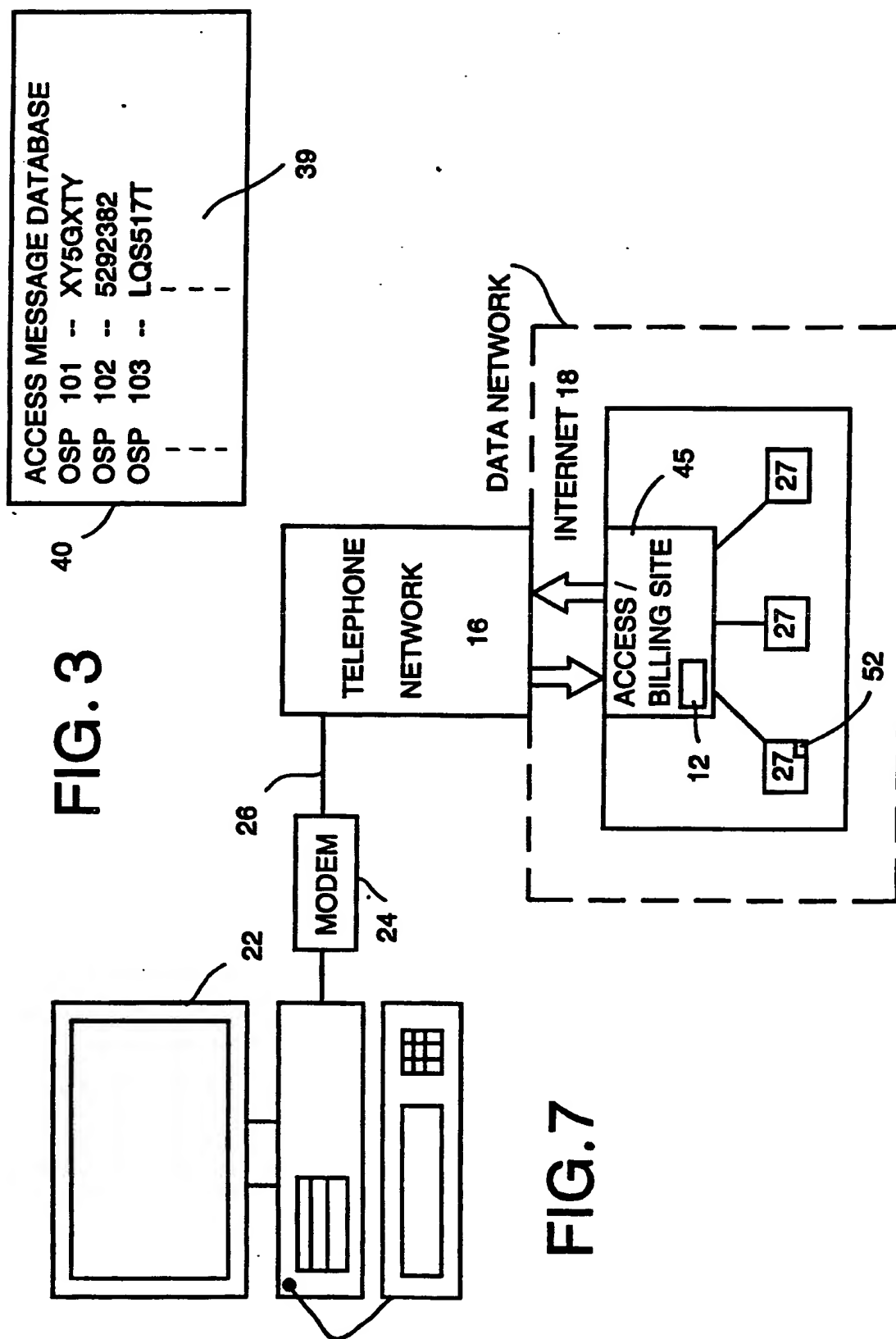
**FIG. 2-2**

## FIG. 2-3



## FIG. 2-4





**FIG. 7**



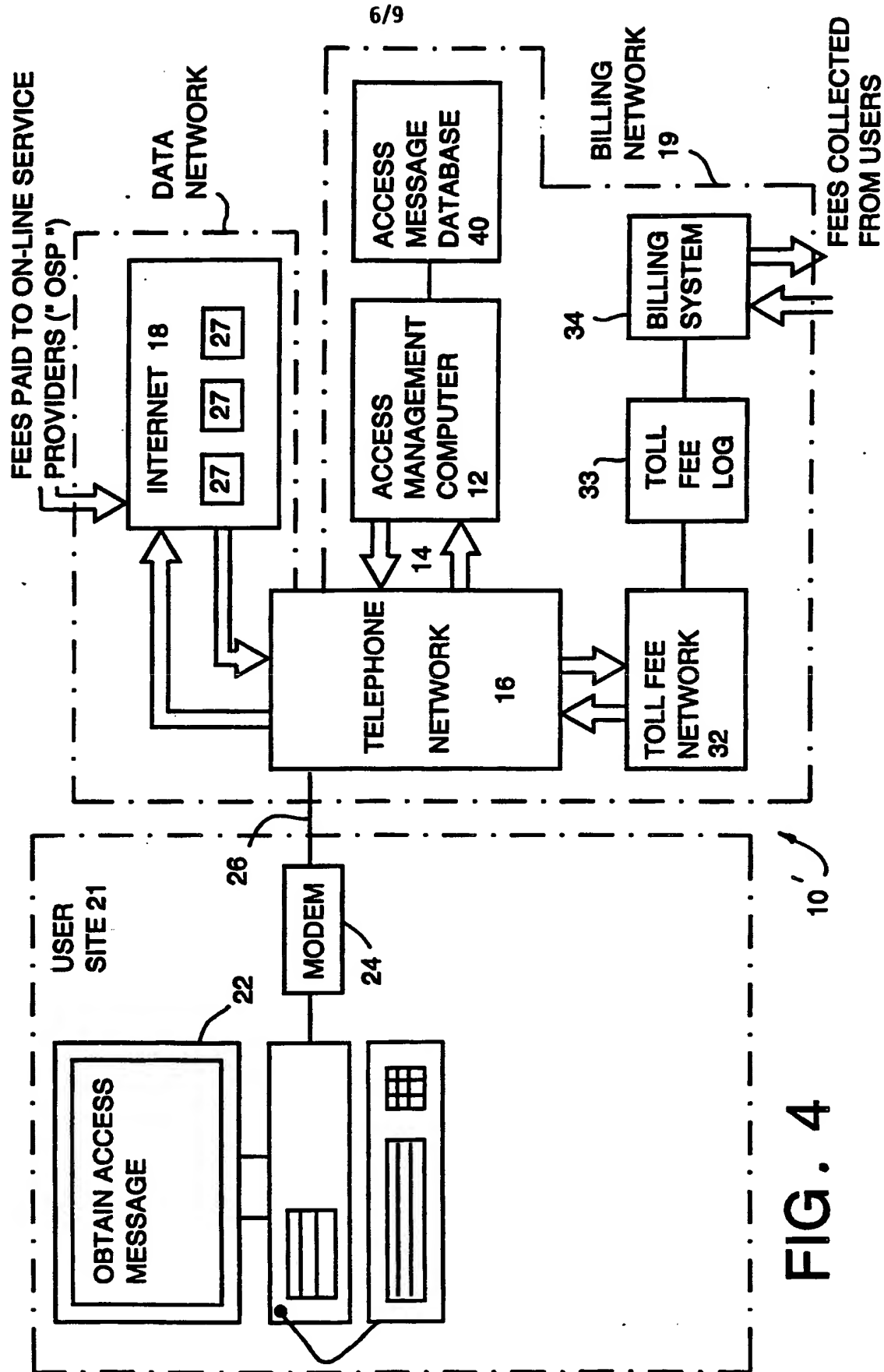


FIG. 4

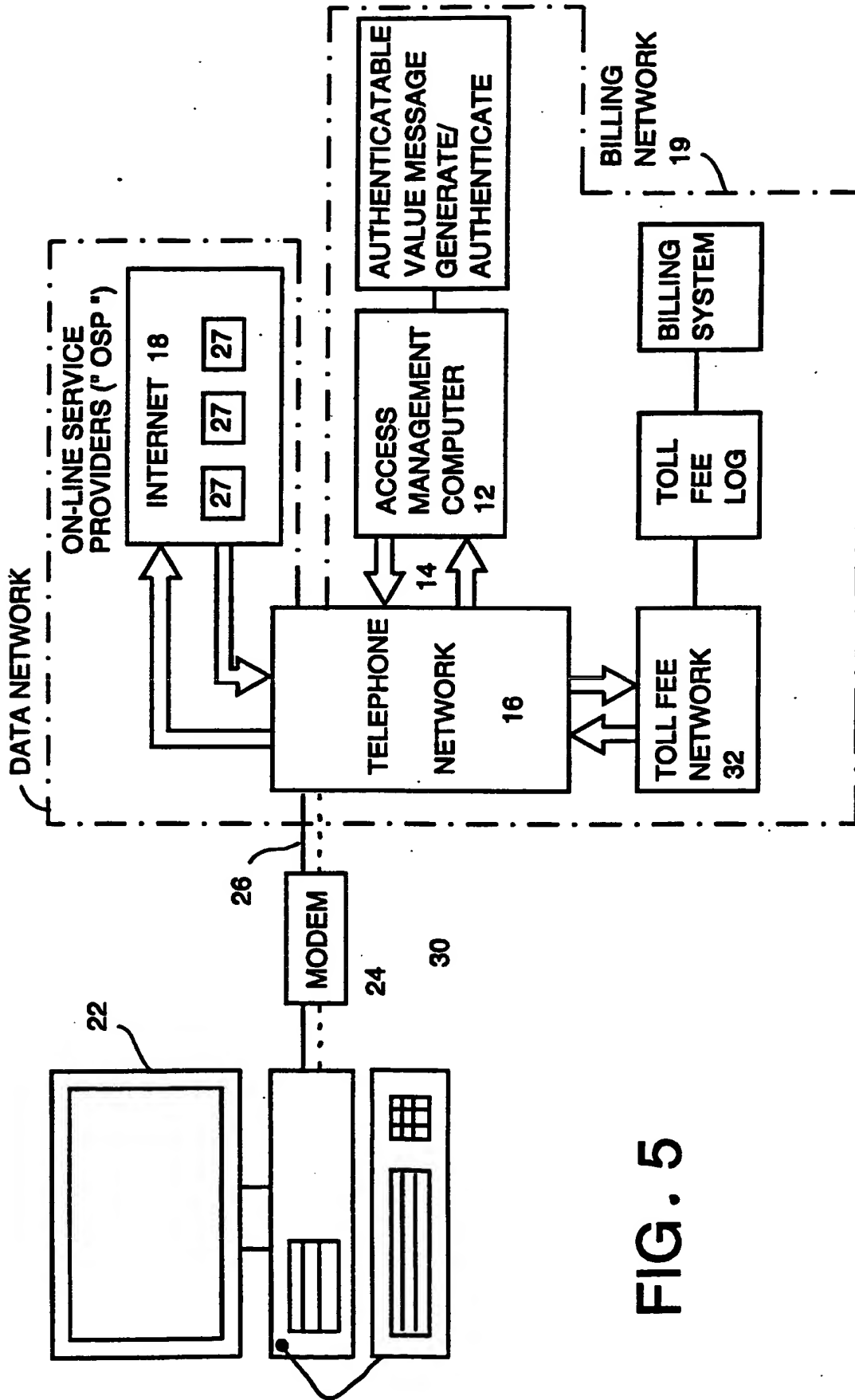
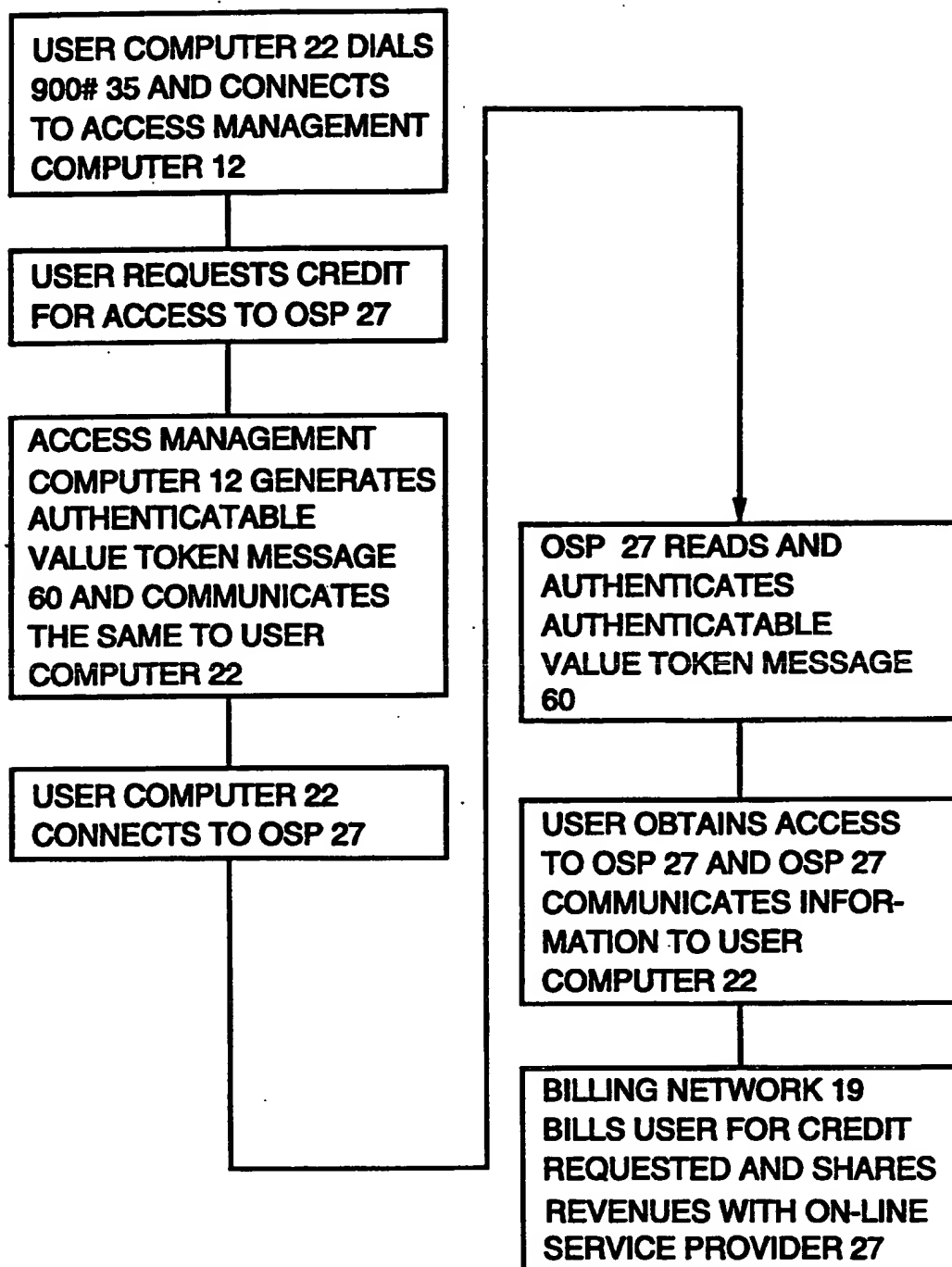
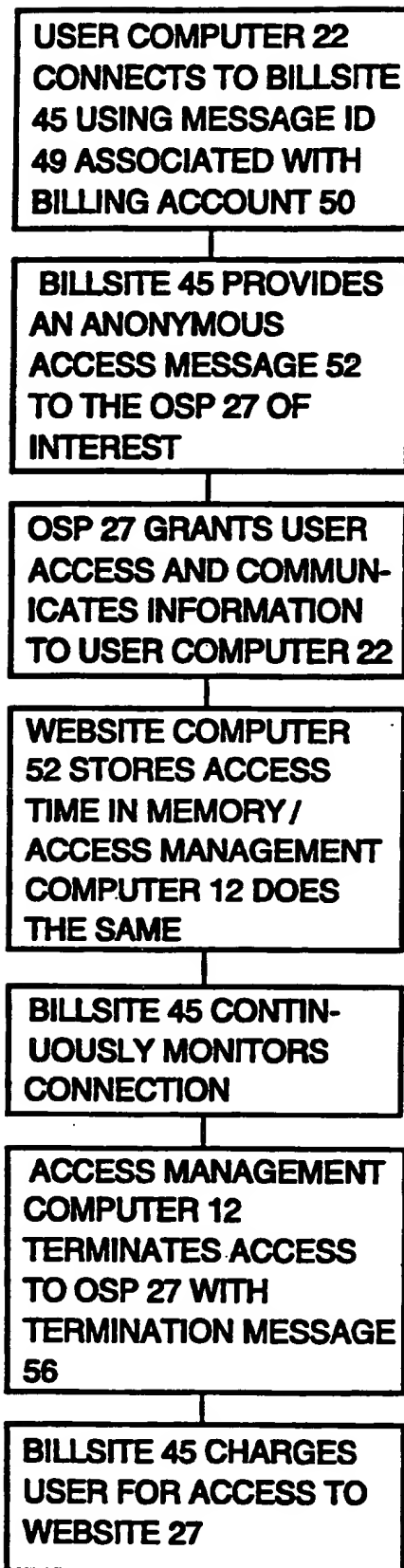


FIG. 5

**FIG. 6**

**FIG.8**

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US96/07221

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) : G06F 13/00

US CL : 395/226

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/226,240; 244, 216

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Internet

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Dialog, APS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	800/900 Billing Systems, www.galaxy-net.com, exact posting date unknown, all links relevant	1-9
Y,P	Business Wire p7121251, "Interactive Services Association Announces Winners of 11th Annual Awards Competition", 12 JULY 1995, page 2 most relevant	1-9
Y	Telemedia News and Views, "The 900 Industry: Takin' Care of Business in '94, JANUARY 1994	1-9
Y	Newsbytes, NEW06200021, Dana Blankenhorn, "Virtual Mall Opens in Cyberspace," 20 JUNE 1994	1-9
Y	Newbytes News Network, 05348022, "First Virtual Bank of Cyberspace," 28 OCTOBER 1994	1-9



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"E" earlier document published on or after the international filing date	Y	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	&	document member of the same patent family
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"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

25 JULY 1996

Date of mailing of the international search report

21 AUG 1996

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**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/US96/07221**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y.	Newsbytes News Network, 01064674, "First Virtual Offers Internet Merchant Banking," 27 OCTOBER 1994	1-9